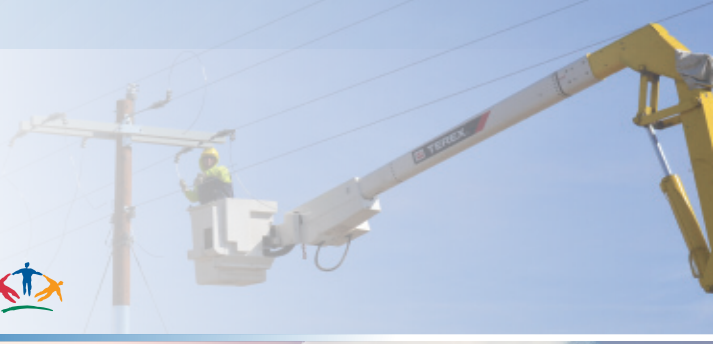
InTouch
WITH MEMBERS OF BUTLER COUNTY RURAL ELECTRIC COOPERATIVE
August 2023 Your Touchstone Energy® Cooperative



Make an informed decision before purchasing solar

If you're purchasing a new vehicle, you'll likely consider vehicle size, buying vs. leasing, new vs. used, fuel economy, safety performance, and available incentives. Your goal is to purchase a vehicle that best meets your unique needs. These same principles apply if you are considering investing in a solar distributed generation system.

First, contact us at Butler County REC. We can help you understand the economics of a solar distributed generation system and what type of renewable energy technology would be best for your property.

Completion of a free energy audit is another important precursor and one that Matt or Tyler can help you with. Many energy-efficiency improvements will save energy, reduce energy bills, and help the environment for a much lower cost than installing a solar generation system. Energy-efficiency improvements reduce your electric usage, so they also may contribute to reducing the size and cost of a solar array needed to meet your energy needs.

Also, consider your goals. Knowing what you want to accomplish with a solar array is critical in the decision-making process. Your goals for the project may impact several aspects of its design and construction. Some of the most common goals that we hear for constructing a solar array are:

Offsetting your personal electrical consumption. With Butler County REC's current renewable policy, a member will be able to off-set daytime usage with a solar array. A solar array has a capacity factor of around 20% for the year, so sizing a system to your daytime demands is pertinent.

Managing future electrical costs. Solar arrays will only produce kilowatt hours (kWhs) during the daytime, weather permitting, so the electrical grid still must have full capacity generation for the balance of the time. Fixed costs are still incurred for the infrastructure, which may cause kWh rates to increase in the future.

Creating a new revenue stream. kWhs purchased back from the membership is at the PURPA (Public Utility Regulatory Policies Act) rate. This is equal to the cost of the fuel to produce one kWh of electricity. The most economical paybacks include offsetting daytime usage and not oversizing the array.

Going off the grid. This requires the purchase of batteries for the member to be able to use the kWhs they produce when the solar array is unable to produce kWhs. This will require the member to purchase an oversized solar array to be able to use kWhs during the day and to store enough kWhs for the nighttime. The cost of the batteries must be considered on a kWh basis over the lifespan of the batteries, which may not be economical.

Being an environmental steward. The recycling of solar array components when the production capabilities have ended has to be considered. Many of the rare-earth metals required to manufacture batteries are toxic to the environment.

Providing a backup power source. When a solar array is interconnected to the grid, it is required by law to have rapid-shutdown capabilities. If there is loss of power on the grid, the solar array will shut down and not produce kWhs. An array is not a backup power source unless batteries are used.

Connecting with us early in the process if you're considering a distributed generation system is critical to the success of your investment. We'll make sure you're asking the right questions and provide straightforward answers so you can make informed decisions.

What questions should I ask?

Talking to Matt or Tyler in our energy-efficiency department and asking questions is an important part of the process:

1. Does Butler County REC have a written policy for interconnecting my solar panel to the grid? Ask us for a copy.
2. Are there any costs to connect my solar panel to the grid?
3. If my solar panels generate electricity that I do not use, what is Butler County REC's policy for paying me for these excess kilowatt-hours?
4. What rate code will I be on after I install solar panels?
5. Is Butler County REC considering any rate design changes that might impact my decision to install solar? How would I be impacted?
6. Will I be able to use my solar panel as backup generation during an ice storm or other outage situation?
7. Do I need to have my solar panels inspected by a qualified local inspector or the State of Iowa?
8. Does Butler County REC have other resources that might help me understand my decision to purchase solar panels?
9. Should I wait to implement energy efficiency until after I install the panels?
10. What type of records should I keep?

Janis Cramer retires

Janis Cramer (pictured right) was a substitute teacher in the Allison-Bristow school district when she was approached about an opening at Butler County REC in the operations department. On June 30, after almost 40 years in that position, Janis retired.

When Janis began, she worked with Bob Bauman, retired Butler County REC CEO/general manager, and Mark Siefken, retired Butler County REC engineer. Bob was Janis's supervisor for one year before he became general manager and Carl Heyenga, also retired from Butler County REC, moved from the line crew into the operations manager position. Janis's work has included charging out material, working with staking sheets, and completing payroll.

Until computers became such an important part of her position, Janis's work was done with pencil and paper. Mark taught Janis how to charge out material using a computer. Then email and now virtual meetings became tools—both advances she would have never considered would be such an important part of her position.

Janis said the most surprising part of her career has been how much she continued to like her job. "Things were always changing but I always liked what I was doing, no matter what it changed to." Her favorite memories include attending meetings and meeting other cooperative employees. "The REC is so good about sending people to meetings to learn."

What she will miss the most about the REC is the people she sees every day at work. "The employees work hard for the membership. The membership is the focus. They are why we do what we do," she commented. "It is just the best place to work. We all work hard and are treated well."

Janis's retirement plans speak to who Janis is and what she enjoys most in life. She will continue to travel and volunteer (she is on the board of Wilder Park in Allison), follow her grandkids and family, garden, sew, read, and walk.

We wish you all the best in retirement, Janis. You will be missed!

Congratulations!

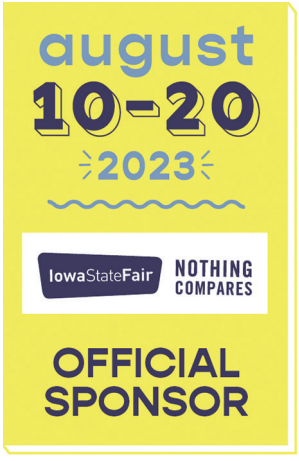
Congratulations to Sue Leerhoff, Clarksville, who won a $25 bill credit from *Iowa Electric Cooperative Living* magazine when her recipe for cupcakes was published in the June 2023 issue.

Consider sending your favorite recipe to *Iowa Electric Cooperative Living*. If yours is chosen, you will earn a $25 power bill credit. Page 9 of every issue details how to submit your recipe either by email or by mail to the magazine's headquarters.

If you're looking for a new recipe to try, visit ieclmagazine.com, click on Recipes and then Recipe Archive.

Let's get cooking!

Connect with your co-op at the Iowa State Fair!

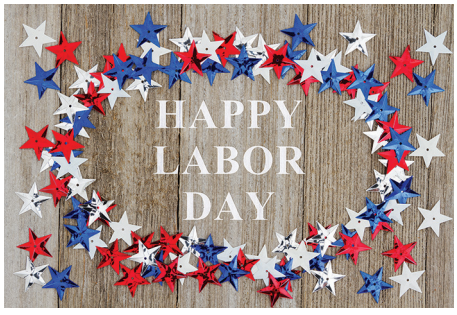


The Touchstone Energy Cooperatives of Iowa are pleased to sponsor the 4-H Exhibits Building at the 2023 Iowa State Fair. Butler County REC is proud to be a Touchstone Energy member, which means we're part of a nationwide network of locally owned co-ops that provides resources and leverages partnerships to help members use energy wisely.

If you're planning a visit to the Iowa State Fair from August 10-20, make sure to stop by and see us in the air conditioned 4-H Exhibits Building on the southwest corner of the fairgrounds.

Electric co-op staff from across the state will hand out plastic hard hats and suckers for the kids while supplies last. Kids can also try on lineworker safety gear and take fun photos in our co-op safety selfie station.

We look forward to connecting with our cooperative members at the Iowa State Fair this summer. Please stop by our booth and say hello!



Butler County REC is closed Monday, Sept. 4, for Labor Day.

Be sure to call us at 888-267-2726 if you have an outage or emergency.

Enjoy your day off, and please be safe!

A WORD FROM

Craig Codner, CEO
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Excess renewable energy and storage

Excess Renewable Energy When our members are considering making an investment in solar generation, questions often come up related to net metering and Butler County REC's buyback rate for the excess generation that may be produced by the solar distributed generation (DG) system.

So, how does a member generate excess energy from a DG system?

If a member owns a solar energy unit and it generates, for example, 100 kilowatt-hours (kWhs), it's fairly common to instantaneously use about 50 percent of those kWhs. The balance is excess energy. The member is not being billed for the energy they instantaneously use. Since energy storage isn't at a point where it's broadly available, economical, or efficient, the excess energy is delivered to the grid and available for use by other members.

Butler County REC and the entities providing power to Butler County REC represent one cooperative system. The Public Utility Regulatory Policies Act of 1978 (PURPA) requires utilities to purchase excess energy and capacity produced by qualifying facilities (for example, distributed generation systems) at a rate equal to the utility's full avoided cost. Avoided cost is the price the cooperative would have paid to produce the same power itself. To calculate this avoided cost, one must look collectively at the entire system.

Compensating for Excess Energy with Net Metering We have been asked why we do not offer net metering. When DG systems were first introduced years ago, the buyback system of net metering also was introduced to encourage the development of small-scale DG and to compensate the owner for the excess generation. Today, many consider net metering to be an incentive for DG and others consider it to be a financial subsidy.

Net metering essentially is a billing mechanism that provides a rate of payment for the excess generation.

Net Metering and Fairness Net metering can be controversial because of the rate paid for the excess energy. With traditional net metering – where the DG owner is given a kWh credit to apply against the kWhs delivered by the utility to the DG owner – the DG owner is receiving the full retail electricity rate for the excess generation. When your electric co-op charges full retail rate for electricity, it covers the purchased cost for the generated power and the fixed costs of the poles, wires, meters, transformers, maintenance, and additional infrastructure needed for a safe and reliable grid.

Compensation for members through net metering is equal to the full retail rate; but DG owners are not providing the same services as the co-op. If they are provided enough credits, it also means they will not be paying their fair share of the fixed costs. Net-metered members use the grid for both consuming co-op generated electricity and delivering excess energy to the co-op's grid, yet pay very limited amounts for those services. Net metering causes a shift in fixed costs from those with DG to those who don't have DG.

Renewable Energy Storage When you think about it, nearly every type of commodity, from the food we put on our tables to the fuel that runs our vehicles, is stored in one manner or another. However, there is one vital element of our daily lives that isn't typically being stored – electricity.

Unlike other commodity sources, such as ethanol or natural gas, there hasn't been an effective way to store electricity. Electricity must be consumed at the same time it's generated, which creates a unique challenge.

While progress continues to be made in developing energy storage solutions, we're not at a point where it's a reliable and economical option for consumers. Batteries and other devices are being used in some applications, for example Corn Belt Power Cooperative's service territory now has a battery energy storage system, but the cost is prohibitive for most consumers. Corn Belt Power is Butler County REC's power provider.

Corn Belt Power collaborated with its membership, including Butler County REC, to develop a plan that allowed each member pool its individual allocation and created one large battery energy storage system. This system is a 1.425-megawatt Tesla® Megapack, which Corn Belt Power integrated into the Hampton Substation on the Franklin REC lines. "We want to learn more about battery technology, from the process of procuring and installing the batteries to operation and how the batteries can benefit Butler County REC and Corn Belt Power," said Jacob Olberding, vice president, power supply, Corn Belt Power. The battery supply is enough power for 150 homes for 6 hours.

We're seeing significant investments being made in technologies that may soon allow for cost-effective and reliable energy storage. From Tesla's Powerwall batteries to water heaters being used as storage devices, we are amid a potentially transformational time in history.

Energy storage, when it's available and practical on a large scale, will likely be one of the most substantial innovations of our lifetime. Just as the accessibility of electricity changed lives decades ago and cell phones changed the way we communicate with one another, energy storage may fundamentally change how and when power is generated and distributed. As with any transformative technology, it will take major investment in infrastructure. When cell phones gained popularity, it took time and significant investment to place cell phone towers throughout the country for widespread coverage.

How close are we to viable energy storage solutions? No one is quite sure yet. Electric cooperatives are playing a role in learning more about and potentially advancing energy storage options. Through our membership in the National Rural Electric Cooperative Association, we invest in focused research, tools, and resources about storage and other technologies so that we can make well-informed and responsible decisions that affect your energy future. As energy storage develops, we'll be ready to evaluate the role it can play in our energy future.

If you have questions about DG or energy storage, I encourage you to visit with Matt Mahoney, Butler County REC's energy services manager, at mjm@butlerrec.coop or 888-267-2726, ext. 122.

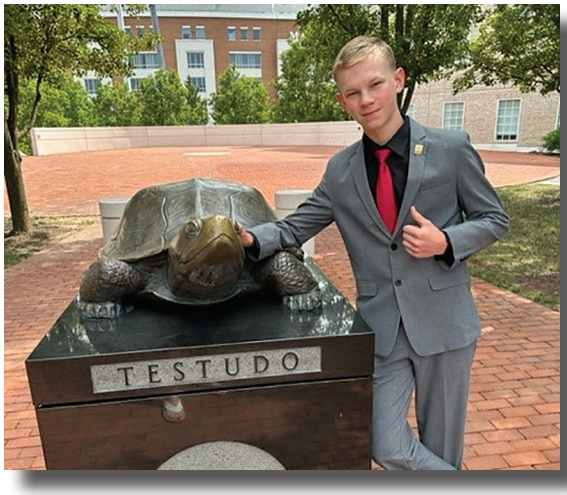
Local student places in national contest after creating electric cooperative history website

From the 50 states. From international affiliates including South Korea, China, American Samoa, Singapore, and Guam. Over 2,600 students. 1,500 projects completed. 54 medals. One Nashua, Iowa, student—Caleb Sinnwell.

In July of 2022, Caleb, a then-sophomore at Nashua-Plainfield, began reading about and researching the background of rural electric cooperatives and the short- and long-term impacts of their creation to develop a website for the National History Day National Contest. He spent months researching, conducting interviews, and developing the website, "With the Flip of a Switch on the Rural Frontier: REA Lights the Way."

Along with meeting numerous deadlines, his first contest hurdle was districts in Cedar Falls. After taking first place, he moved onto the state contest in Des Moines, where he again took first place.

Caleb, who has attended Butler County REC meetings since he was a young boy, has always found electricity and the formation of cooperatives interesting. "This was my opportunity to learn so much more about how my family receives electricity and why it is so very important to all of us, even though most times it is taken for granted. This was such an interesting event in history that I wanted to share it with everyone."



Caleb Sinnwell with the University of Maryland's mascot, Testudo, a terrapin.

Growing up, Caleb heard stories from his grandparents about his great-grandparents and the number of challenges they faced living and working on the farm with no electricity. "I also thought it was interesting that electricity existed but for the more heavily populated areas, and farmers were being left in the dark."

Included on his website are interviews with Craig Codner, CEO of Butler County REC; Duane Rieckenberg, board president of Butler County REC; and Carl Heyenga, retired operations manager of Butler County REC. Heyenga set poles with the first Butler County REC crews who brought power to east-central rural Iowa. "Interviewing Craig, Duane, and Carl was fascinating and opened my eyes to the hard work Carl faced digging holes and getting electricity to the farmers who wanted it desperately."

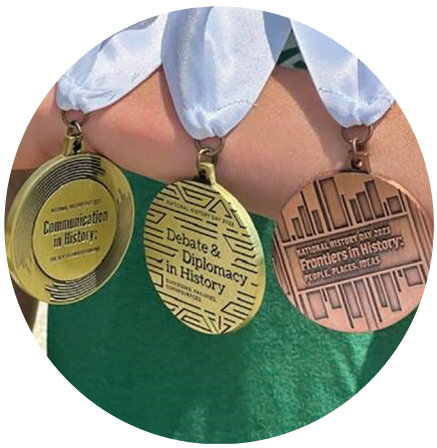
How the REC board of directors, elected by the membership, functions is something that Caleb understood but throughout his research and interviews, he learned more about RECs as innovators and "that they are always doing their best to support the local communities and rural vitality."

Butler County REC is very proud of Caleb and his dedication to telling the rural electric cooperative story. He earned a bronze medal at the National History Day National Contest at the Xfinity Center at the University of Maryland in June for his website. This is the third year in a row that Caleb has taken home a medal from the contest.

Caleb commented, "RECs do so much more for us in ways I never even thought of, and I am so proud that Butler County REC is where my family receives its electricity because I know they truly care about us and our future."

Caleb will be a junior in the fall. He is the son of members Josh and Heather Sinnwell, Nashua. You can view Caleb's website at: https://bit.ly/3qYnjAq or on the Butler County REC website under About Us.

(L to R) Caleb; Heather Sinnwell, Caleb's mom; and Suzan Turner, Caleb's teacher



Caleb's three National History Day National Contest medals.

IN*touch* **is published monthly for members of Butler County Rural Electric Cooperative**
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